

webuild 



webuild group sustainability

July 2022

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WEBUILD
SUPPORTS
THE SDGs

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#WePromote a Sustainable World

WE CONTRIBUTE TO IMPROVE THE LIVES OF PEOPLE AND THEIR COMMUNITIES WHEREVER WE WORK

~ **89 M** people benefiting from ongoing Group projects

WORLDWIDE

10 M
North America

38 M
Europe

1 M
Middle East

24 M
Africa

10 M
South America

6 M
Asia and Oceania

Sustainable mobility
43 M
people served



Clean hydro energy
23.4 M
eq. residents served



Clean water
16.3 M
eq. residents served



Green buildings & others
6.8 M
people served



WE SUPPORT THE ADVANCEMENT OF SDGs

7,000+
additional hospital beds



857 M
m³ of treated water daily



14,000
MW of new renewable energy installed



50%
high-speed's travel time average reduction



3.2 M
avoidable car journeys per day thanks to metro projects



24 M
t CO₂ avoidable per year



#WeBelieve in a Sustainable Future



#WeInvest in Sustainability

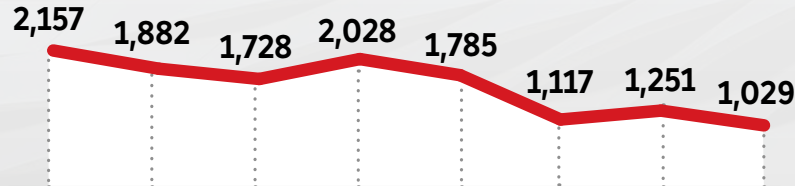
We invest in 3 sustainability "construction sites" with programmes and ESG targets for the next three years.



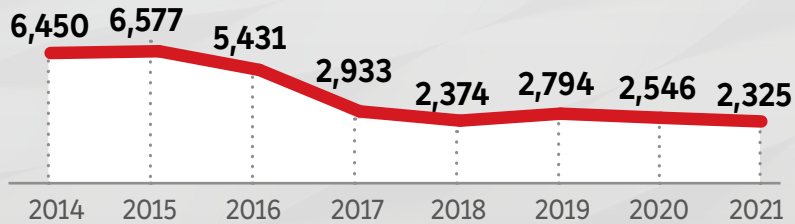


Green Builders

Energy intensity
(GJ/€m)



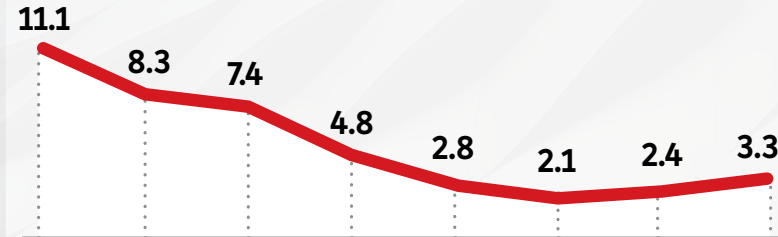
Water intensity
(m³/€m)



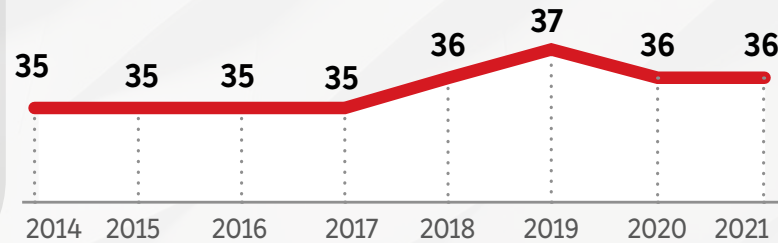
Safe and Inclusive Builders

WEBUILD'S TRACK RECORD

Lost Time Injuries Frequency

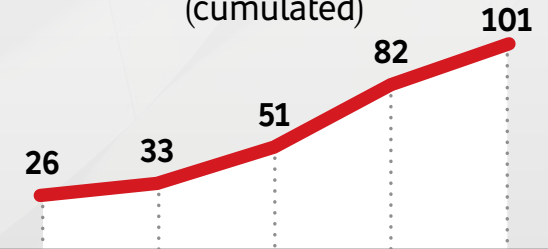


Women working at HQ
(%)

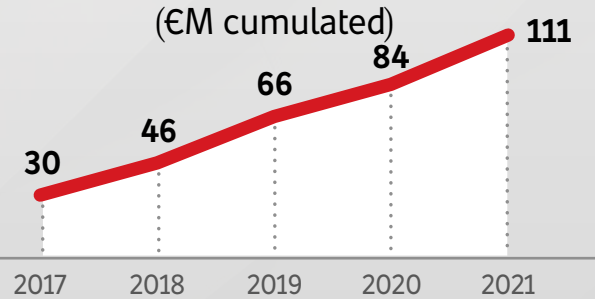


Innovative and Smart Builders

Developed innovative solutions
(cumulated)



Investments in innovation
(€M cumulated)



EU "GREEN" TAXONOMY



2021 Revenue recognised by the EU Taxonomy



2021 CapEX recognised by the EU Taxonomy



2021 OpEx recognised by the EU Taxonomy



Greenhouse emission intensity scope 1&2¹
(2025 vs 2017)



Lost Time Injury Frequency Rate (LTIFR)²
(2022 vs 2017)

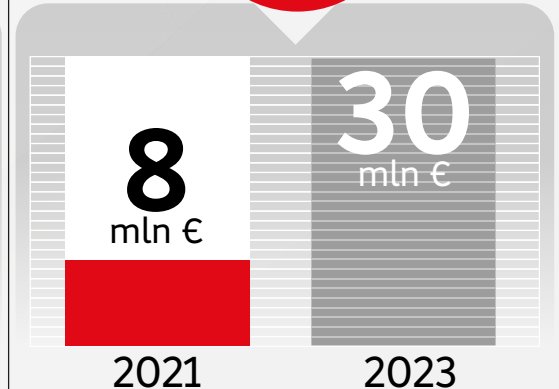
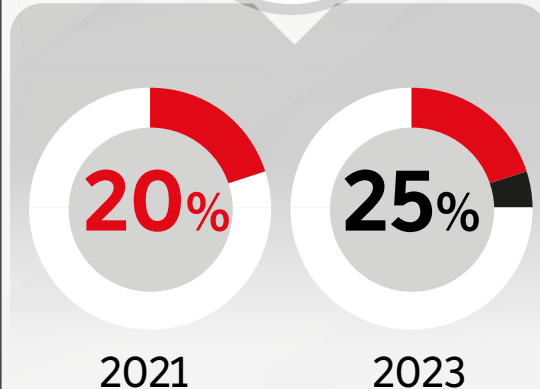
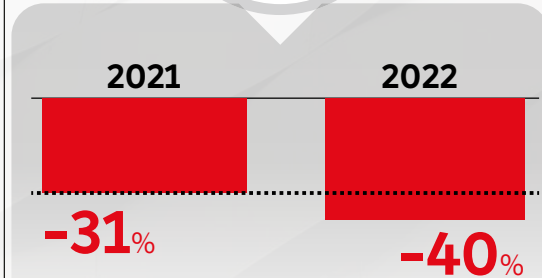
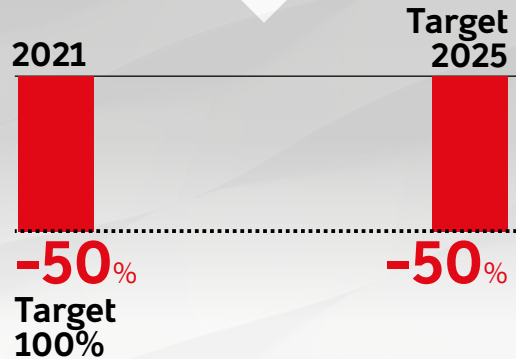


Women identified in the key role succession planning (2023)



Investments in innovative projects (2023)

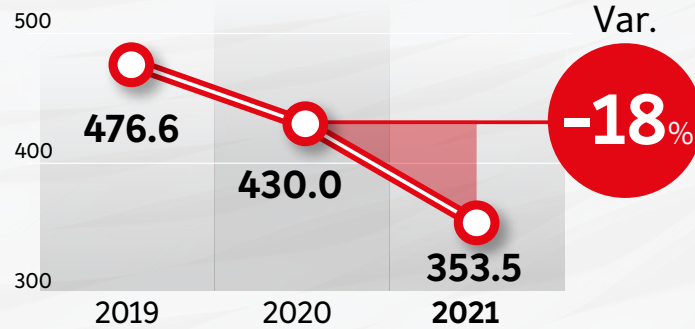
2021 Results



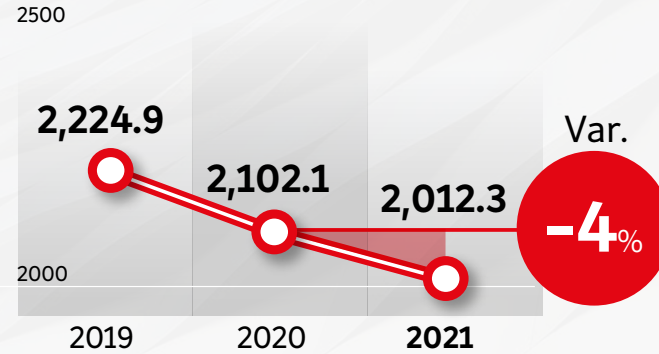
1. Scope 1&2 indicate CO2e emissions coming from the consumption of fuels (scope 1) and electricity (scope 2) per million euro of revenues

2. LTIFR shows the lost time (days) frequency rate for injuries occurred per 1 million worked-manhours

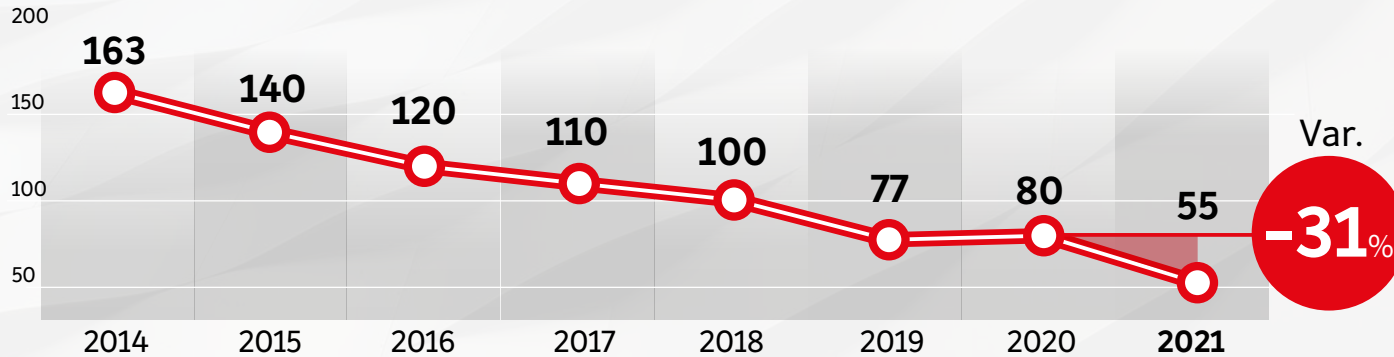
Emissions Scope 1-2¹ (kt CO₂e)



Emissions Scope 3² (kt CO₂e)



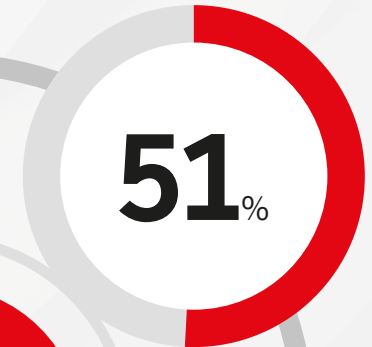
Emissions Intensity³



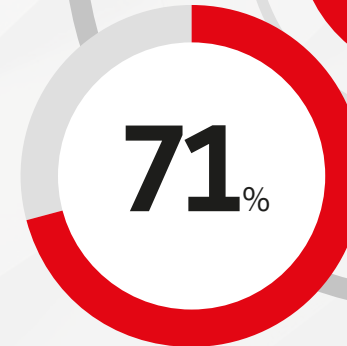
Reused spoils



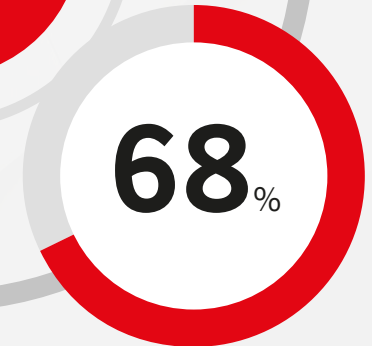
Waste sent for recycling



Circular economy



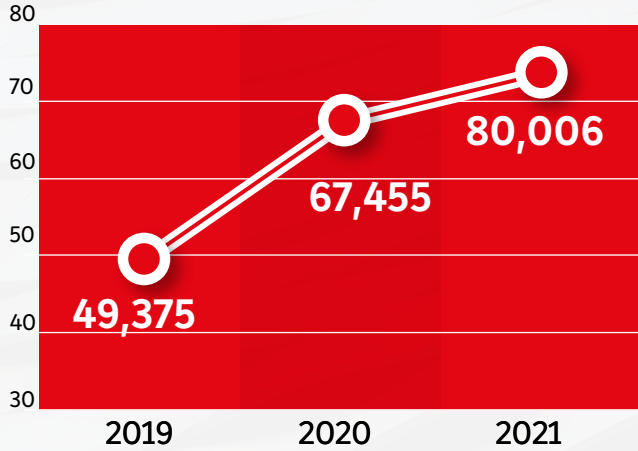
Materials acquired within 160 km of work sites



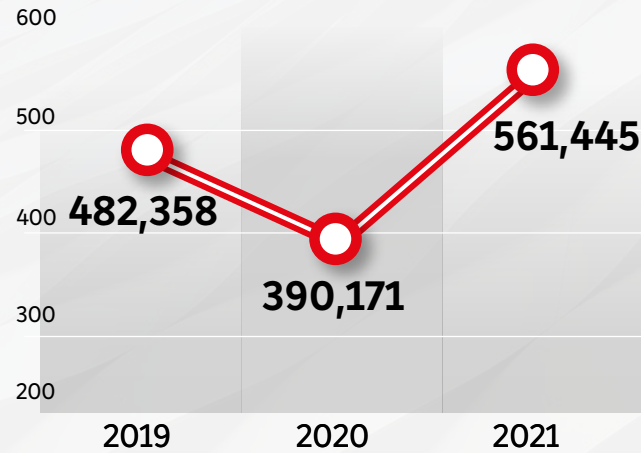
Low carbon steel used

1. Scope 1&2 indicate CO₂ emissions coming from the consumption of fuels (scope 1) and electricity (scope 2)
 2. Scope 3 (indirect emissions from purchased goods and services, Business travel, Employee commuting, Waste disposal)
 3. Emissions Scope 1&2 per million euro of revenues (tCO₂/€m)

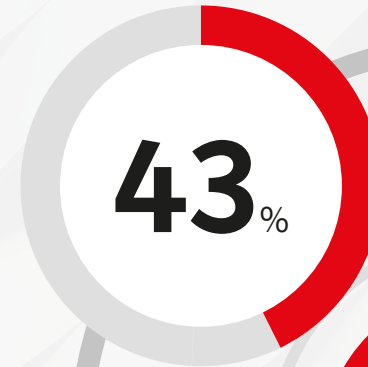
Direct and third party employees



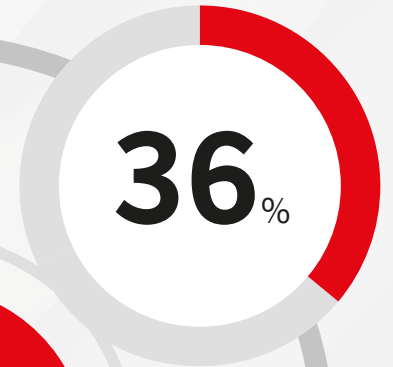
Training (hours)



Employees Under 35

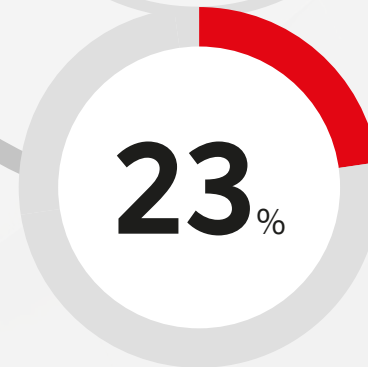


Women at Corporate level

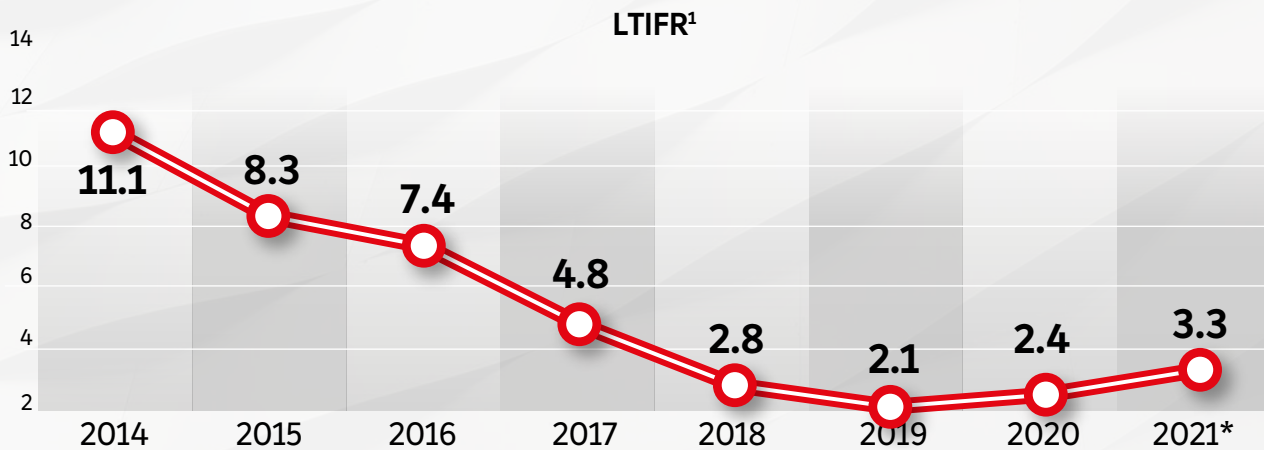


Inclusion and diversity

Key roles held by international staff



Safety



1. Lost Time Injuries Frequency Rate - Injuries occurred per 1 million worked-manhours | *Astaldi included



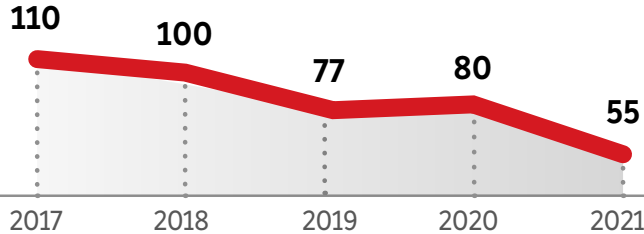
Green Builders



WEBUILD'S ACHIEVEMENTS

Constant reduction in CO₂ emissions
-50% (2021 vs 2017)

Intensity of CO₂ emissions
 (t CO_{2e} scope1-2/€m)



Increased investment in **low-carbon solutions**

50 Solutions tested and implemented in the last 3 years

205k t CO_{2e}* Avoided emissions in last 3 years with low-carbon solutions

* CO₂e = CO₂ equivalent

Webuild Solutions

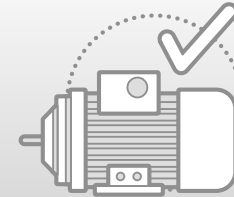
Power quality for electricity systems



Central station to supervise and stabilise electricity supply

Reduced consumption

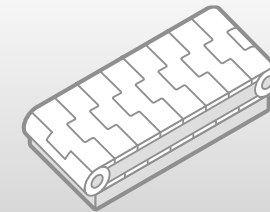
Efficient machinery



Highly efficient catalytic systems

Reduced consumption and pollution

Automated conveyor belt for materials transport



Conveyor belts for earth removal

Elimination of trucks and related pollution

Highly efficient tunnel ventilation systems



Air quality sensors

Reduced consumption and improved comfort



Green Builders

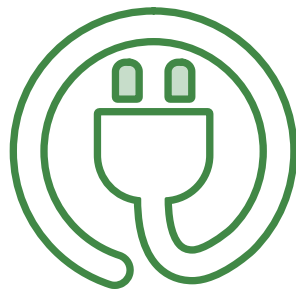


ENERGY AND CLIMATE

WEBUILD'S COMMITMENT

Sustainable Construction Sites

Webuild solutions for clients wanting net zero construction sites



Integrated approach to **carbon neutral solutions**

Innovation in construction techniques and technology

35% electricity generated by **renewable sources**

Webuild solutions in development

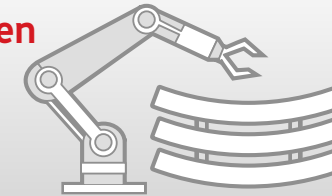
Green TBM



Optimise onboard TBM systems

Reduced water and energy consumption

Robotic green precast



Pre-cast concrete tunnel segment plant

Reduced lifecycle footprint of segments

Preventive maintenance of temporary installations



Sensors and artificial intelligence to anticipate repairs

Reduce consumption and running costs

Renewables and low-carbon vehicles



Solar panels, mini-hydro, storage, hybrid/electric vehicles

Reduced consumption and emissions



Green Builders



ENERGY AND CLIMATE

WEBUILD'S ACHIEVEMENTS

Consolidated experience in projects with high standards in certified sustainability



Dozens of completed **resilient and low carbon projects**

Resilience
Re-engineered projects with climate risk assessment

Low carbon
Project solutions for reduced *embodied carbon*

Completed Webuild projects

Sidney Metro NorthWest



Re-engineered project for climate in 2100

Reinforced support structure, expanded rain discharge system

Re-engineered permanent materials

Material footprint reduced by 1/3 (-33%)

Genova San Giorgio Bridge



Re-engineered project for climate in 2100

Strengthened structure for wind resistance and water discharge

Permanent installed systems

Service system and diagnostic robots powered by solar panels



Green Builders



WEBUILD'S ACHIEVEMENTS

Sustainable infrastructure
Webuild solutions for net zero infrastructure




Integrated approach to develop **carbon neutral design solutions**

Innovation in planning methodology

Materials and renewable energy

Webuild solutions in development

Lifecycle design

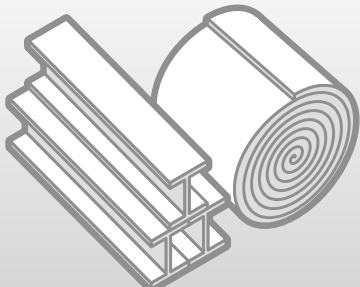


POLITECNICO DI TORINO

Research into developing software to calculate carbon footprint at the design stage

Reduce carbon/energy footprint throughout the life cycle of the infrastructure


Low carbon materials



Research and development of materials, mixtures and compounds with high level of recycled ingredients/low virgin material content

Reduced embodied carbon materials

Self-sufficient permanent installations



Research and development of renewable installations to power per permanent systems

Reduced energy consumption for functioning of public work

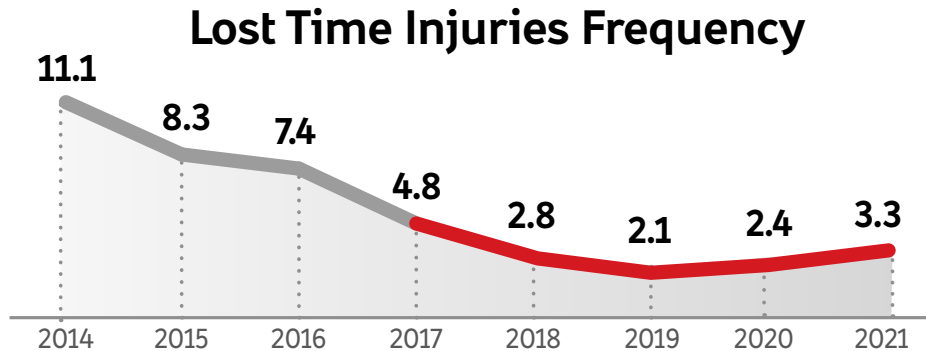
Safe and Inclusive Builders

SAFETY

WEBUILD'S ACHIEVEMENTS

Webuild programmes implemented

Constant decline in rate of accidents
-31% reduction in LTIFR* index (2021 vs 2017)



Increased investment in safety

Leadership
 Programmes to turn employees into Safety Builders

*LTIFR shows the lost time (days) frequency rate for injuries occurred per 1 million worked-manhours

FOUR YEARS OF

Our Health and Safety Way

Training and Internal Communication programme, cascading from the Board of Directors to all employees

Valyou - Safety Builders Program 2018 - 2021

37 work sites and offices

2,833 managers and supervisors involved

200+ workshop

≈14,000 Hours of training

World Safety Days 2016 - 2021

19,000+ participants

170+ work sites

2,000+ photos

225+ videos



Safe and Inclusive Builders

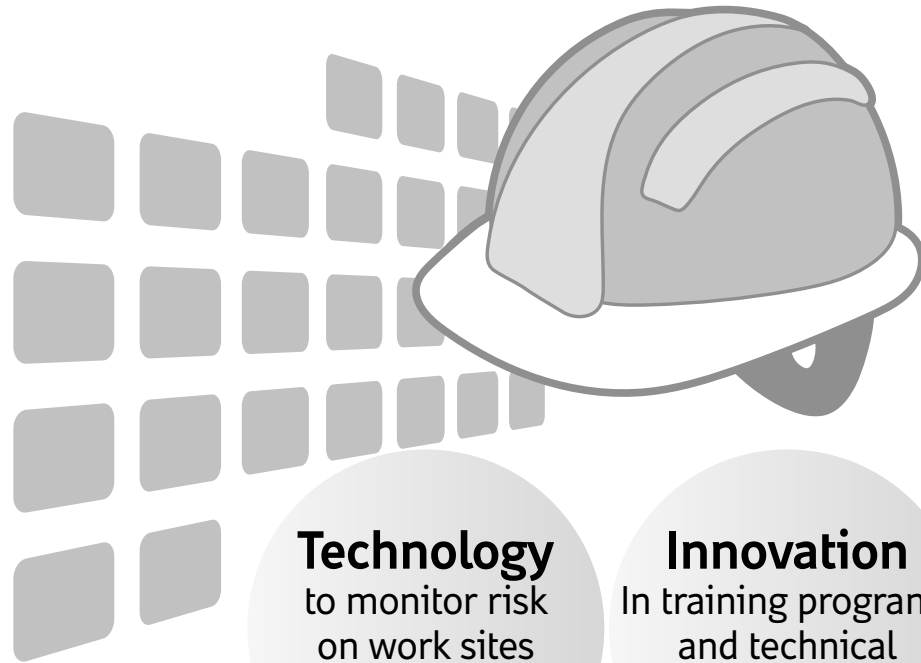
SAFETY

WEBUILD'S COMMITMENT

Webuild solutions in development

Safe construction sites

Webuild solutions for zero injuries on construction sites



Technology
to monitor risk
on work sites

Innovation
In training programs
and technical
communication

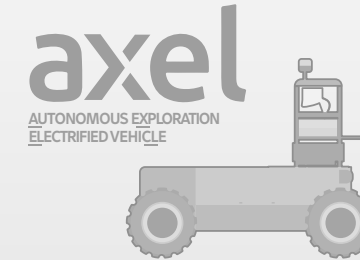
Smart safety



Technological development (sensors for vehicles, scaffolding, helmets, equipment) to collect in real time data on possible risks (collisions, falls...) and alert workers

Reduce accident rate

Remote-Controlled Rover



Highly innovative remote-control system to replace humans in exploring potentially dangerous niches and tunnels.

Tunnel explorations conducted in safety

Innovative safety training



New technical and communication programs for construction workers using simulators and 3D-4D technology (vehicle simulators)


Better training and risks reduction

Safety on all work sites


ACTIVITIES AT **WEBUILD** SITES IN ITALY

SAFETY

ACTIVITIES FOR **SUPPLY CHAIN** IN ITALY 2021- 2022

 **130**
H&S inspectors

 **>18,000**
average hours per year of direct employee training

 **>1,500**
people trained in 2021

RESULTS ACHIEVED

3.5
ACCIDENT RATE
of the Genova San Giorgio Bridge project in 2020
four times less than Italian average


~15
ACCIDENT RATE IN ITALY



138
skill training sessions

322
safety training sessions

WEBUILD **SAFETY LEADER** WITH INFLUENCE OVER THE SUPPLY CHAIN

Safety: initiatives taken on the Genova San Giorgio Bridge Project

THE GENOVA MODEL FOR SAFETY

SAFETY

GROUP ACTIVITIES INCLUDING THE SUPPLY CHAIN



CONTINUOUS ON-SITE TUTORING

+



ADDITIONAL SAFETY GEAR FOR MACHINERY

+



ANTI-COLLISION PILOT PROJECT FOR VEHICLE ON VEHICLE, VEHICLE ON HUMAN

+



LEADERSHIP PROGRAMME ON SAFETY

+



SAFETY AWARENESS EVENTS FOR STAFF

24/7

CAPILLARY COVERAGE OF ALL WORK SITE AREAS AT EVERY SHIFT



24 H&S staff

Webuild best practice in Safety

SAFETY

GENOVA SAN GIORGIO BRIDGE

2019-2020

3.5

ACCIDENT RATE IN 2020



>1 mln hours

WITHOUT ANY RELEVANT ACCIDENT

SUPPLY CHAIN

>300

BUSINESSES INVOLVED

>1,300

SAFETY AND INTEGRATION PLANS

Valyou
Program



CONTINUOUS ON-SITE TUTORING

CITYRINGEN, COPENHAGEN

2011-2019

3.3

ACCIDENT RATE IN 2019



>1 mln hours

WITHOUT ANY RELEVANT ACCIDENT

Zero

22 work sites
8 years
serious accidents

Think Safety
Program



Safe and Inclusive Builders

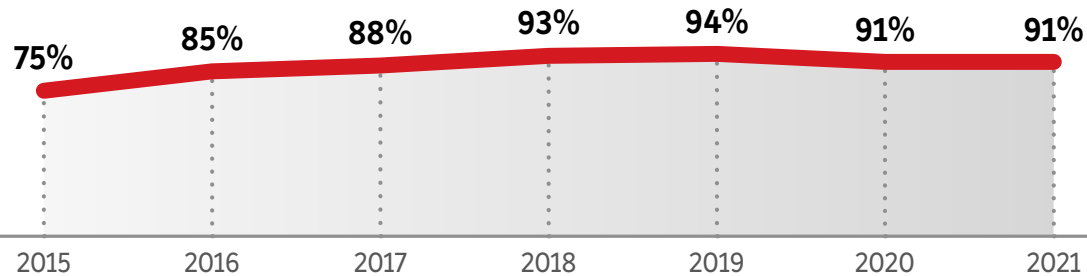
INCLUSION

SUPPLY CHAIN INVOLVEMENT

80,000
Average number
of employees, direct
and third party

15,000+
Suppliers
from 70 countries

Purchases from local suppliers



84%
Workers
hired
locally

36%
Women
working
at headquarters

100+
Nationalities
among workers on
construction sites

Economic impact on areas where projects are being built

Webuild policy to rely on local workers and suppliers to support economy of areas where projects are being built

**7x**

Jobs created for every
direct Webuild
employee*

**€3.6x**

GDP generated for
each euro of
added value

**€3.5**

Income multiplier for
every euro paid
in salary by Webuild

**≈8**

Multiplier for every
euro paid in taxes
by Webuild

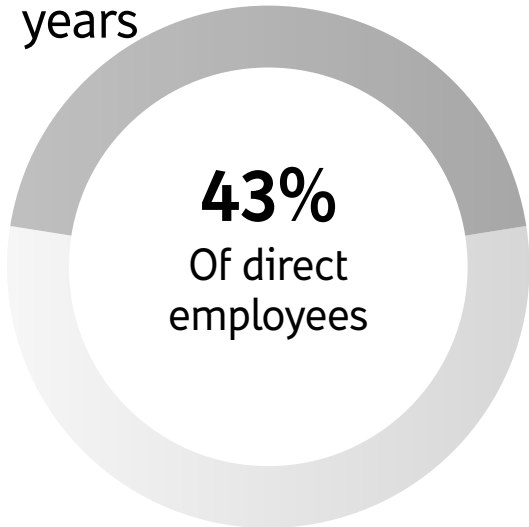
Safe and Inclusive Builders

INCLUSION

TALENT INCLUSION

Webuild programmes implemented

Under 35
years



Dedicated Programs
to include young talent

Inclusion criteria
in research, development and evaluation of performance

Universities



Università Commerciale Luigi Bocconi



POLITECNICO MILANO 1863



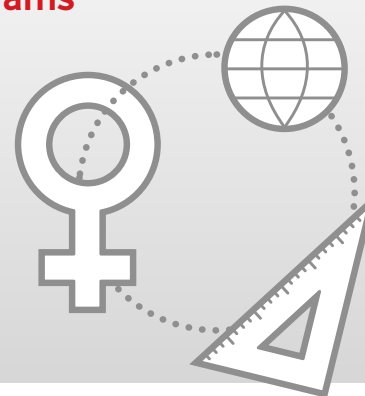
Università di **Genova**



THE UNIVERSITY OF QUEENSLAND AUSTRALIA

Partnerships and collaboration programs with domestic and foreign universities to support strategic markets and provide training for employment at Webuild with a focus on young women in STEMs

Inclusion programs



New training and internal communication programmes for young talent, women and new colleagues (ie. Astaldi), with a focus on age, gender and culture inclusion



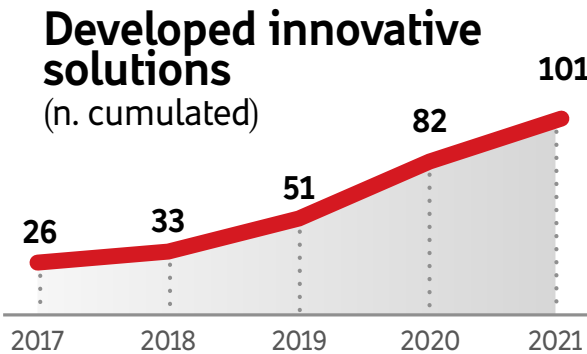
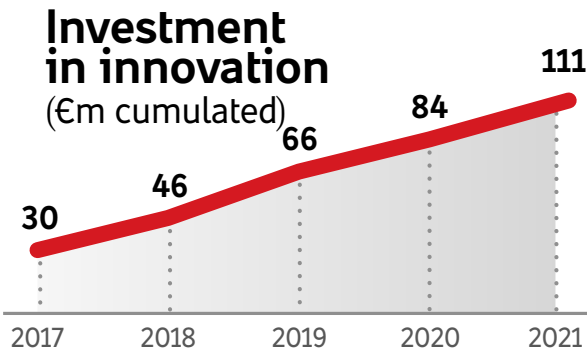
Innovative and Smart Builders

INNOVATION

INVESTMENT IN INNOVATION

~290

Average number of employees per year dedicated to innovation, R&D



Webuild's approach
Innovation at all of the stages of the business process



Some Webuild solutions

Techniques to reuse TBM materials

Vertical Risers (Vertical pipe-jacking)

Tailor-made concrete mix design

Tunnel WeView System

Intelligent Biodiversity Monitoring

Ratings achieved in 2021

MSCI ESG
Rating
A



CDP Climate
Rating
B



ISS ESG
Rating
Prime



VigeoEiris
Rating
Advanced



Ecovadis
Rating
Gold



Our best practices in sustainability

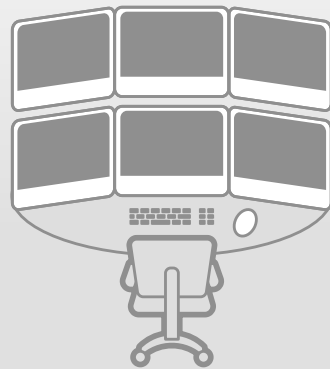


POWER QUALITY IMPROVEMENT

We have developed, tested and implemented **technology to make electric systems at work sites more efficient** to reduce energy consumption, CO₂ emissions and operating costs
Implementation

Energy Monitoring System

- Monitoring of electricity currents
- Data collection on server



Phase 1

Energy Management and Data Analytics

- Analysis of energy consumption
- Identify ways to improve efficiencies



Phase 2

PQI technologies

- Technology installation
- Test and analysis of results



Phase 3

Analysis / Validation of results



9% Reduction of CO₂ emissions



9.1% Reduction in energy consumption



10% in cost savings

Phase 4

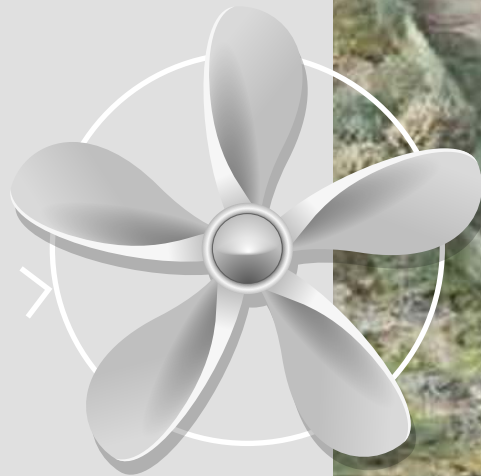
Implementation

- Brenner Base Tunnel
- New projects at the start-up phase in Italy and abroad
- Multi-sector



SMART AIR MONITORING SYSTEM

The system controls the ventilation and air quality in the tunnel, enabling the plants to operate at the required rather than maximum level. It provides optimal comfort and an efficient use of energy.



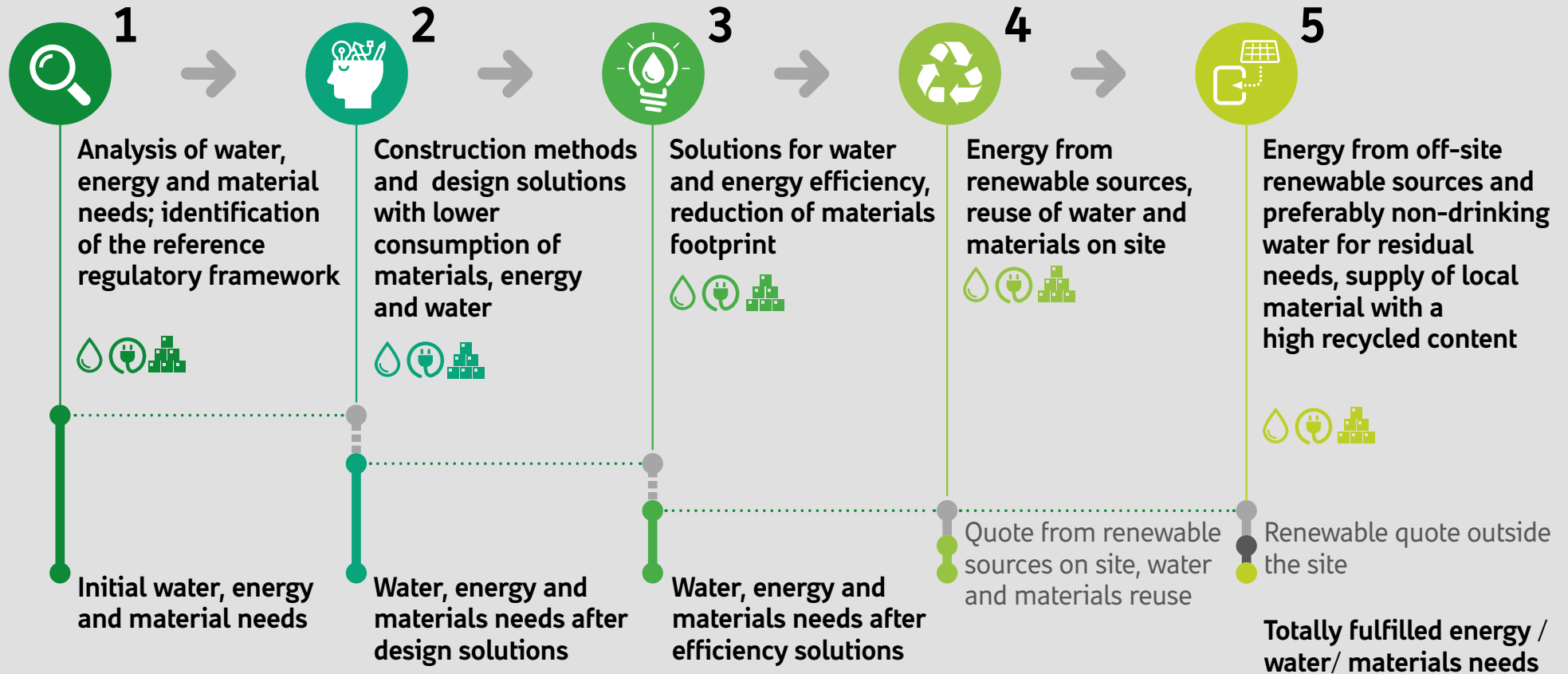
Implementation

- Rogun hydropower dam, Tajikistan
- New projects in start-up phase in Italy
- Multi-sector



EFFICIENT AND LOW CARBON SITE

Webuild designs and implements construction sites used to build its infrastructure, by subjecting all industrial processes to the **assessment, efficiency and optimization** of environmental components, particularly **water, energy and material consumption**.



Implementation

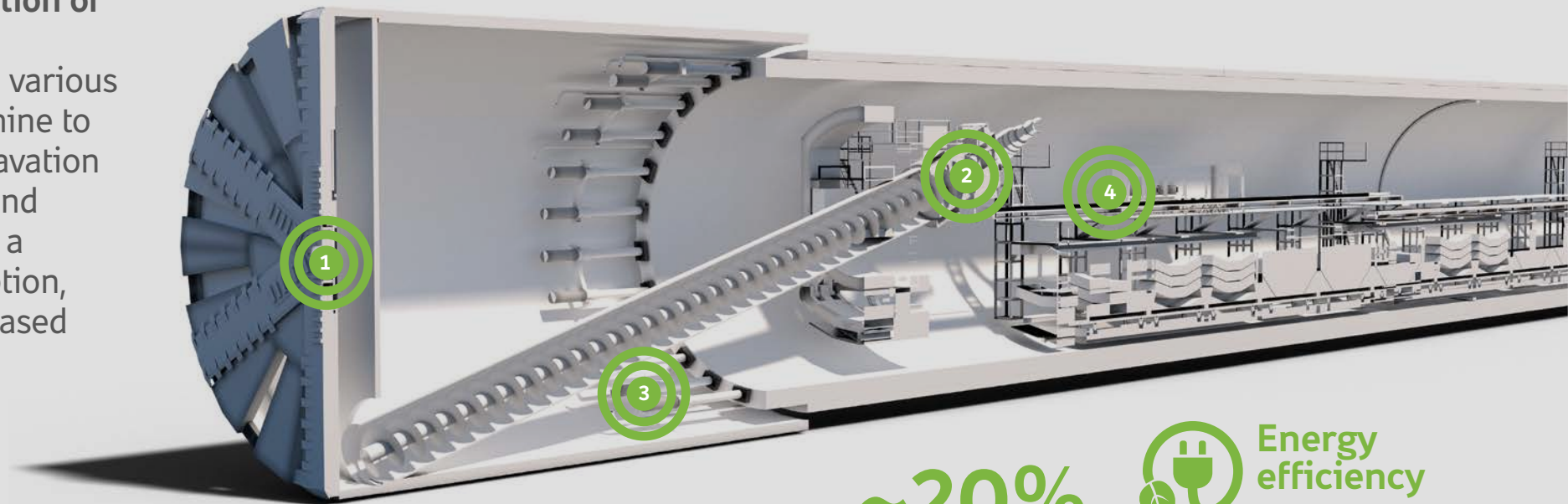
- New projects at the start-up phase in Italy and abroad
- Multi-sector



GREEN TBM

Study of the use of an **green TBM** capable of reducing the **energy consumption of the TBM (KWh) by 20%**.

This is possible by optimizing the various systems and devices on the machine to improve the efficiency of the excavation and all the numerous functions and auxiliary equipment; the result is a reduction in the energy consumption, faster excavation times and increased safety.



Implementation

- New projects at the start-up phase in Italy and abroad
- Multi-sector

~20%
Reduction of
energy
consumption



Energy
efficiency
measures

- 1 Cutterhead
- 2 Muck transport
- 3 Hydraulic system
- 4 Other services



SMART&GREEN SEGMENT FACTORY

Automated system that uses high efficiency robotic technology with a systematic integration of innovative solutions, efficiency, circular economy, environmental footprint reduction, and the development of a more resilient and performing product.

The robotic factory can be dismantled and reinstalled in another area, according to a design-for-deconstruction perspective.

Planned Implementation

- New projects in start-up phase in Italy
- Multi-sector





REDUCTION IN EMBODIED ENERGY

Thanks to **Design Optimization**, Webuild can **reduce the use of prime materials**, such as concrete and related CO₂ emissions.

>60,000 fewer tons of concrete used

-33% material footprint reduction

>30,000 tons of avoided CO₂ emissions

275 kW renewable capacity



Implementation

- Sydney Metro Northwest, Australia
- Forrestfield-Airport link, Perth, Australia



ROBOT MONITORING / CLEANING

Two types of **robots** with innovative applications: an **inspection robot** that scans and monitors the steel surfaces of the external deck to ensure the highest levels of control and safety; a totally eco-sustainable **robot-wash** used to clean the glass and photovoltaic panels on the deck. This application allows an optimization of control activities, by reducing their frequency and increasing their reliability at the same time. This solution increases the work's safety and reliability, also reducing management costs.



Implementation

- San Giorgio Bridge - Genoa



INNOVATIVE MATERIALS

Draining backfill material for TBM tunnels, to reduce external hydraulic loads. These materials also allow a structural optimization and an increased durability of the work.



Ultra-high performance backfill grout for TBM. This material increases the work's ultra-high performance back fill grout and reduces construction risks.



Planned Implementation

- HS / HC Naples-Bari rail line, Apice-Hirpinia section

Implementation

- Snowy 2.0 Hydropower project, Australia



SMART SAFETY

Pilot projects with **sensor systems** for: interaction between human and machine, and/or human and suspended loads, delimitation of more dangerous areas, in-Vehicle Monitoring Systems. Construction-site vehicles equipped with cameras and white noise buzzer.



Implementation *

Multi-sector

* potential

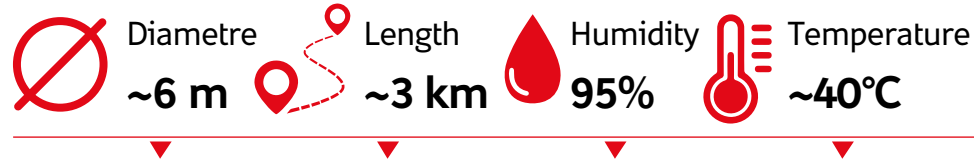


WEBUILD'S REMOTE-CONTROLLED ROBOT

Project TELT - TURIN-LYON HIGH-SPEED RAILWAY
 "Nicchie la Maddalena" construction site

Maddalena Tunnel

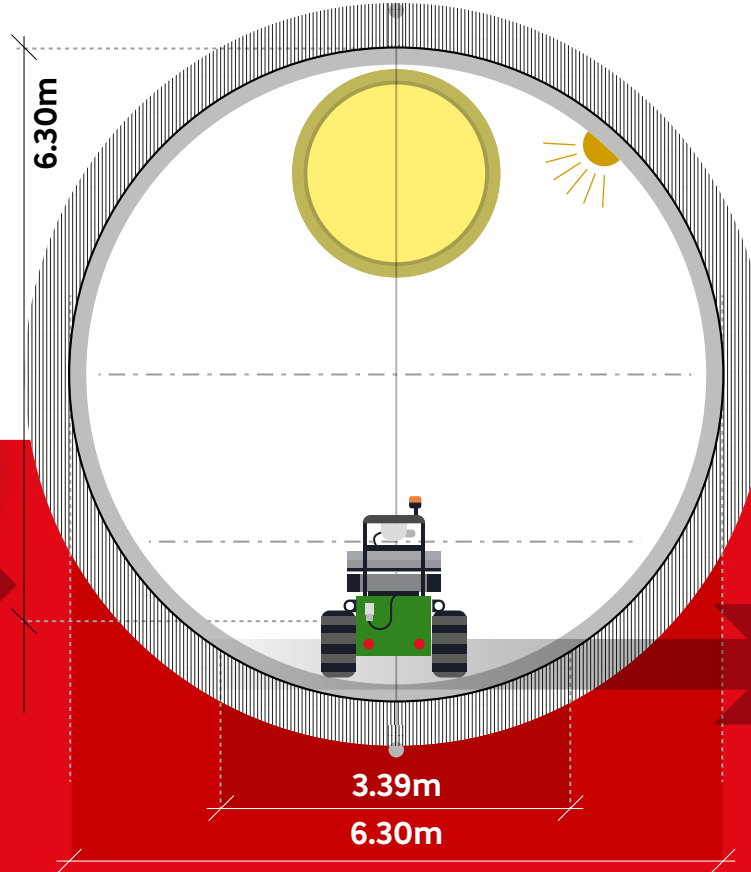
World-First Robot Prototype For Inspections by Remote



Remote-controlled robot for tunnel inspections



The Rover



axel
 AUTONOMOUS EXPLORATION
 ELECTRIFIED VEHICLE

developed
 with CIM 4.0

Width	Wheelbase	Traction	Wheel diameter
1.6m	~2m	Four-wheel	>60cm

TBM MATERIAL REUSE TECHNIQUES

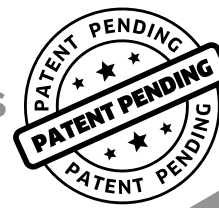
Study concerning the reuse of materials excavated by the TBM, as embankment materials to decrease the environmental impact and project costs, from a circular economy perspective.



Implementation*

Multi-project

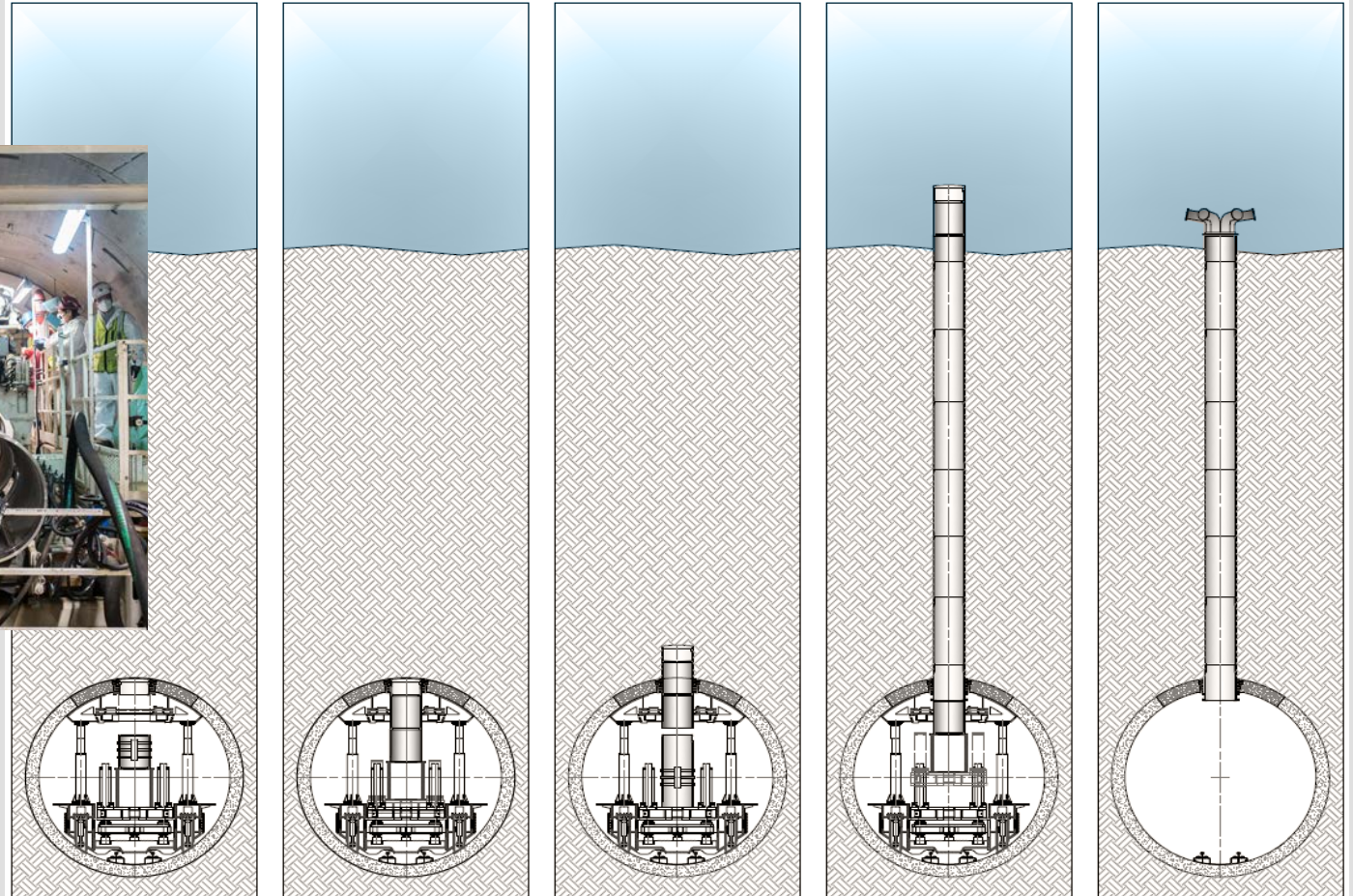
* potential



VERTICAL RISERS (VERTICAL PIPE-JACKING)



This innovative methodology, was used for the first time in the world by Webuild, to install vertical risers (vertical pipe-jacking), operating from the inside of a submarine tunnel, allowing the mechanization of the work process, also improving workers' safety, reducing risks and bringing environmental benefits and improved construction times



Implementation

- Riachuelo environmental restoration system, Argentina
- Multi-project

TAILOR-MADE CONCRETE MIX DESIGN



Concrete mix designs, and their related production processes, are **developed** and optimized **by Webuild**, even in poorly served areas. This is done to fully meet the technical specifications, also considering executive issues, durability, logistic organization, and transport optimization. And also, material usage, environmental protection and territorial context matters.



Implementation

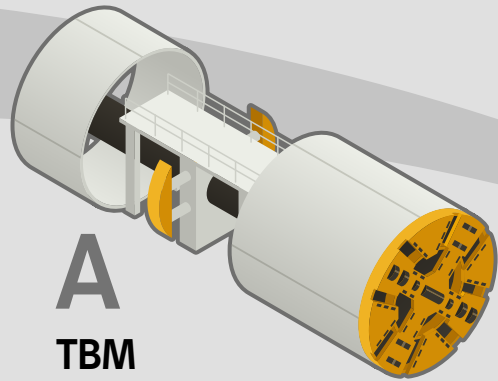
- GERD Dam, Ethiopia
- Koysha Dam, Ethiopia
- Neckartal Dam, Namibia
- Multi-sector

TUNNEL WEVIEW SYSTEM

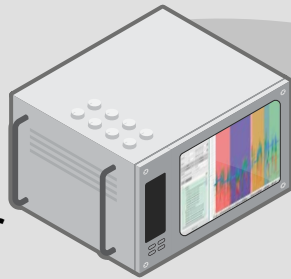


The **Tunnel WeView System** has been designed and developed to collect, process and display, in real time, all the data collected by the TBM, and all systems and equipment used on site, including monitoring ones.

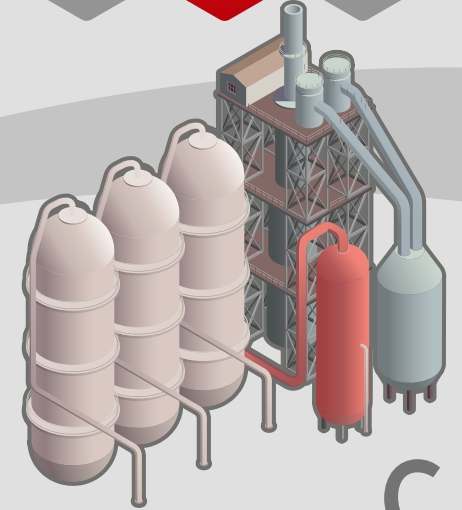
The system collects information from different sources in the site, transforming **disaggregated data** into information available in a single control room, which is then integrated and can be used.



A
TBM
control
systems



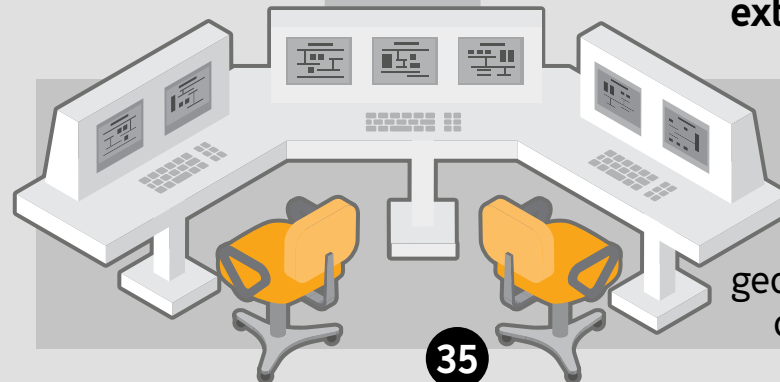
B
Other
TBM
systems



C
Other
systems and
machinery



D
Additional
data/documents,
external to the monitoring system



Interrelation
between
operations,
production,
geological data, and
other parameters



Implementation

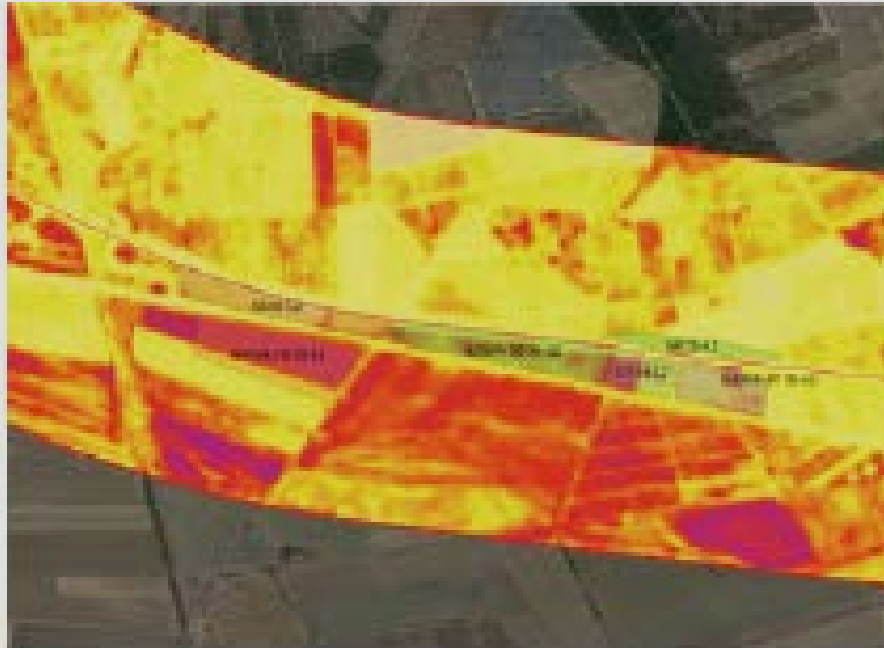
- Snowy 2.0 Hydropower project, Australia
- Multi-project

INTELLIGENT BIODIVERSITY MONITORING



Webuild **protects the territory** that hosts its construction sites establishing a close relationship with it. This is achieved through innovative and smart best practices to safeguard the territory's peculiarities, fauna, flora and biodiversity.

Among the activities carried out: monitoring valuable crops through a satellite multispectral analysis; use of motion detection cameras for wild-life monitoring purposes.



Implementation

- Bicocca-Catenanuova rail section
- Multi-sector

webuild 